

Cigarette Smoking and ARDS After Blunt Trauma

The Influence of Changing Smoking Patterns and Resuscitation Practices

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CHEST 2020; 158(4):1490-1498

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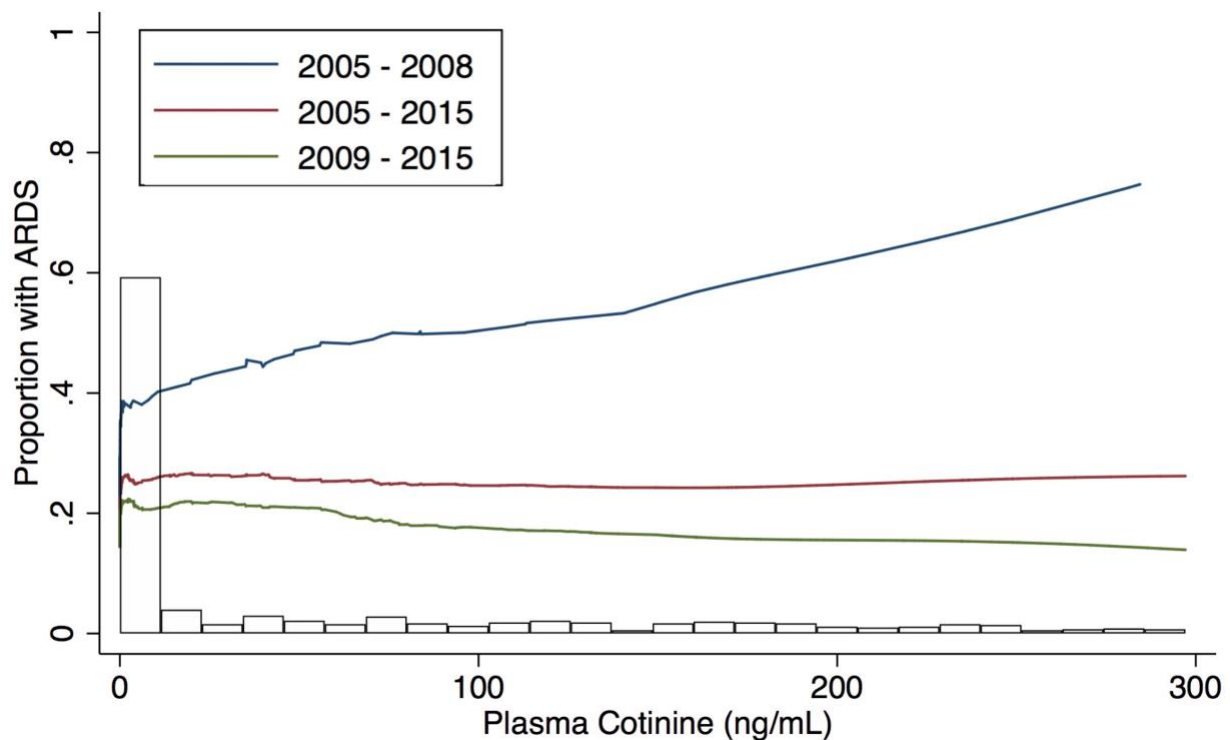
e-Table 1: Odds of developing ARDS in patients with any cigarette smoke exposure after trauma by study time period

Study Enrollment Period	Univariate		Multivariate**	
	Odds Ratio* (95% CI)	P value	Odds Ratio* (95% CI)	P Value
2005 – 2015 (n = 635)	1.7 (1.1 – 2.7)	0.03	2.3 (1.3 – 4.0)	0.004
2009 – 2015 (n = 491)	1.5 (0.9 – 2.6)	0.16	2.4 (1.2 – 4.7)	0.01

* All analyses were performed with nonsmokers as the reference group.

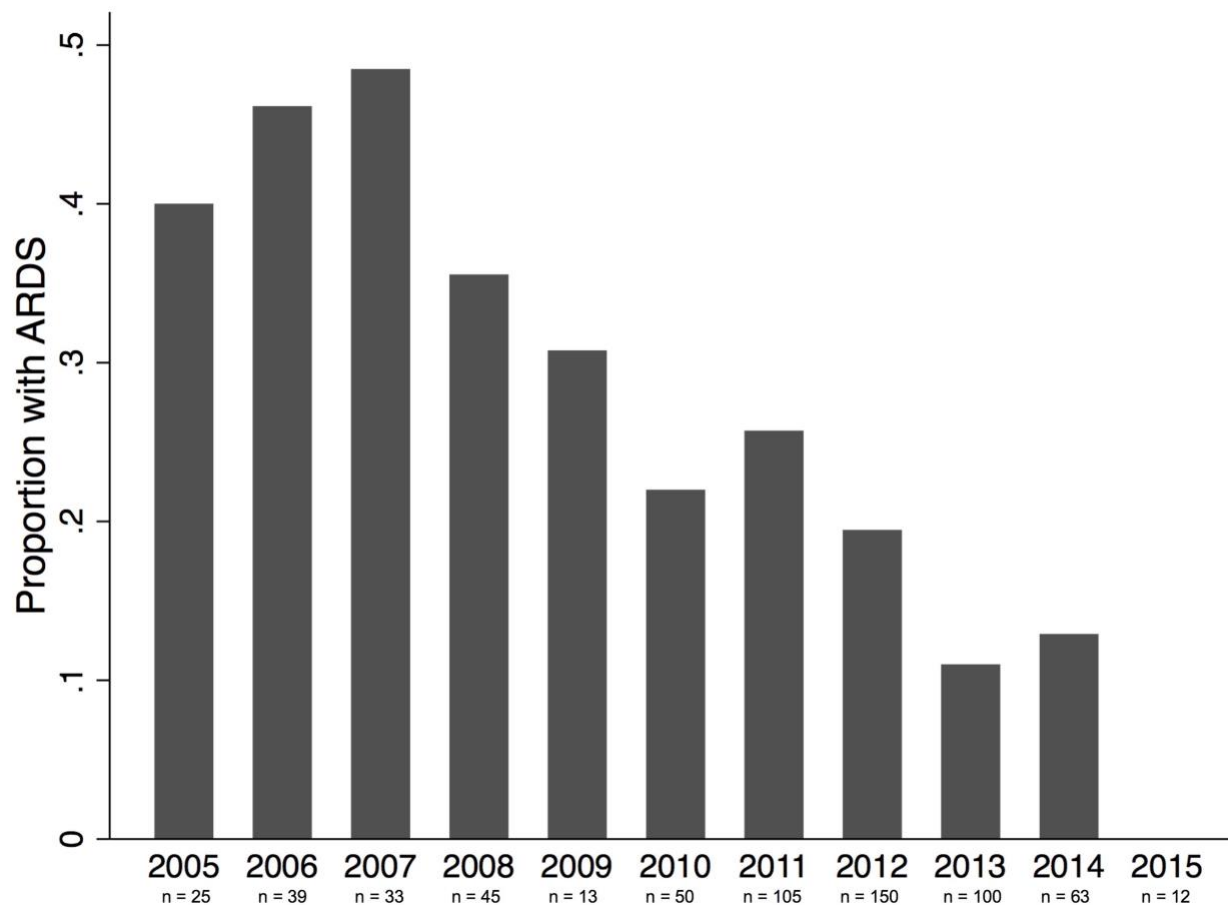
**Age, Sex, Race, Diabetes, Traumatic Brain Injury, Injury Severity Score & Alcohol Misuse

e-Figure 1: Lowess curve for ARDS vs. plasma cotinine



2 patients from the 2005 – 2008 subgroup were enrolled in January - February 2009.
Histogram reflects cotinine levels for all time periods

e-Figure 2: Rate of ARDS by year



e-Table 2: Intravenous fluid and blood product administration in the first 24 hours following trauma

	Nonsmokers (n = 154)	Passive Smokers (n = 190)	Active Smokers (n = 291)	P value
Any packed red blood cells transfused, 24h	72 (47%)	79 (42%)	113 (39%)	0.25
Packed red blood cells transfused, units, 24h	1 (0 – 3)	0 (0 – 3)	0 (0 – 3)	0.53
Any platelets transfused, 24h	25 (16%)	21 (11%)	28 (10%)	0.11
Platelets transfused, units, 24h	0 (0 – 0)	0 (0 – 0)	0 (0 – 0)	0.02
Any fresh frozen plasma transfused, 24h	47 (31%)	54 (28%)	86 (30%)	0.92
Fresh frozen plasma transfused, units, 24h	0 (0 – 2)	0 (0 – 2)	0 (0 – 2)	0.94
Any cryoprecipitate transfused, 24h	7 (5%)	6 (3%)	17 (6%)	0.41
Cryoprecipitate transfused, units, 24h	0 (0 – 0)	0 (0 – 0)	0 (0 – 0)	0.43
Crystalloid, L, 24h	3.9 (2.4 – 6.0)	4.7 (2.9 – 6.5)	4.6 (3.0 – 6.9)	0.03
Colloid, L, 24h	0 (0 – 0)	0 (0 – 0)	0.32	0.86

Cotinine < 0.02 ng/mL = nonsmokers. Cotinine ≥ 0.02 ng/mL & < 3.08 ng/mL = passive smokers. Cotinine ≥ 3.08 ng/mL = active smokers. Normally distributed variables are presented as mean (SD). Non-normally distributed variables are presented as median (IQR).

e-Table 3: Odds of developing ARDS after trauma by plasma cotinine smoking status – Imputed vs Non-imputed Alcohol Misuse

	Imputed**		Nonimputed***	
Smoking Status*	Odds Ratio (95% CI)	P value	Odds Ratio (95% CI)	P Value
2005 – 2015 (n = 635)				
Passive Smokers (n = 190)	2.4 (1.4 – 4.4)	0.003	2.6 (1.4 – 4.8)	0.002
Active Smokers (n = 291)	1.7 (0.9 – 3.2)	0.08	1.9 (1.0 – 3.5)	0.046
2009 – 2015 (n = 491)				
Passive Smokers (n = 148)	3.2 (1.5 – 6.6)	0.002	3.4 (1.6 – 7.1)	0.001
Active Smokers (n = 215)	1.6 (0.7 – 3.3)	0.24	1.6 (0.8 – 3.5)	0.21

* Cotinine < 0.02 ng/mL = nonsmokers. Cotinine ≥ 0.02 ng/mL & < 3.08 ng/mL = passive smokers. Cotinine ≥ 3.08 ng/mL = active smokers. All analyses were performed with nonsmokers as the reference group.

** Age, Sex, Race, Diabetes, Traumatic Brain Injury, Injury Severity Score & Alcohol Misuse (imputed)

*** Age, Sex, Race, Diabetes, Traumatic Brain Injury, Injury Severity Score & Alcohol Misuse

e-Table 4: Odds of developing ARDS in patients with any cigarette smoke exposure after trauma by study time period – Imputed vs Non-imputed Alcohol Misuse

	Imputed		Nonimputed**	
Study Enrollment Period	Odds Ratio* (95% CI)	P value	Odds Ratio* (95% CI)	P Value
2005 – 2015 (n = 635)	2.1 (1.2 – 3.7)	0.03	2.3 (1.3 – 4.0)	0.004
2009 – 2015 (n = 443)	2.3 (1.2 – 4.5)	0.02	2.4 (1.2 – 4.7)	0.01

All analyses were performed with nonsmokers as the reference group.

* Age, Sex, Race, Diabetes, Traumatic Brain Injury, Injury Severity Score & Alcohol Misuse (imputed)

** Age, Sex, Race, Diabetes, Traumatic Brain Injury, Injury Severity Score & Alcohol Misuse (nonimputed)